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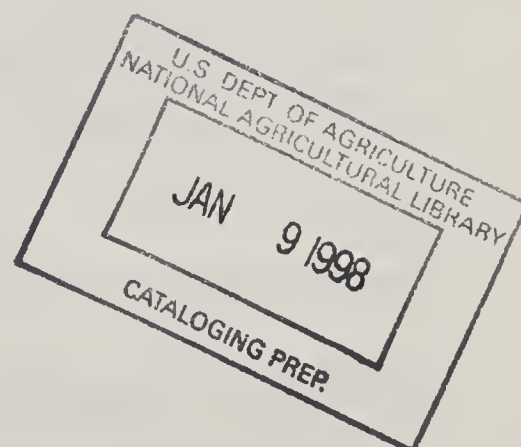
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Providing Economic Knowledge for the

Food and Fiber Sector

Report of an Advisory Committee to the
Administrator, Economic Research Service

November 1972



PREFACE

The ERS Administrator, Quentin M. West, appointed a Committee in May 1972 to study ERS research and information programs relating to commercial agriculture. The Committee was made up of individuals from agricultural industries, research and educational institutions, and USDA.

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Committee's Assignment

The Committee was asked by Administrator West to focus on two principal objectives:

1. Identify major areas of economic research and information needed to assist in development of the food and fiber industries in the 1970's. This included identifying the research and information needs of the various participants involved in production, marketing, and distribution of food and fiber, the needs of those responsible for formulating and operating public programs bearing directly upon the food and fiber industries, and the needs of individuals outside of, but affected by, the food and fiber sector.
2. Appraise current research and information programs for commercial agriculture in ERS, and develop recommendations for changes which might be appropriate in such programs to meet future research and information needs as identified by the Committee.

The Committee was asked to concern itself with program orientation and content and ERS relationships with other agencies and institutions in carrying out ERS missions.

Committee Review Procedure

Our review of ERS research and information programs for commercial agriculture focused on 4 Divisions (Economic and Statistical Analysis, Farm Production Economics, Foreign Development and Competition, and Marketing Economics) and the Outlook and Situation Board. In total these entities account for approximately 73 percent of the appropriated ERS budget and 61 percent of ERS personnel.

We are impressed with the magnitude of resources available in these Divisions. They afford ERS the opportunity to develop programs of a scale and scope unattainable in any other single research organization. However, these same characteristics, coupled with the multiplicity of the missions of the agency, compounded the task of reviewing and evaluating its programs, particularly by a Committee composed largely of "outsiders."

In the review process we relied heavily upon ERS personnel, particularly Division Directors, for description of current programs. Viewpoints concerning the quantity and quality of ERS research and information as well as program balance and future research needs of the food and fiber sector were solicited from a number of sources, including representatives of USDA action agencies and members of the Secretary's Office.

Our report is in part a distillation and in part a summarization of views presented by those who met with us and who contributed significantly to our review process. The recommendations, summarized in the beginning of the report, are our own. The summary, however, only partially conveys the tone and perspective of the report. For that reason we urge careful reading of the entire report.

We sincerely hope the report will be of value to ERS in developing programs to meet the present and future needs of commercial agriculture.

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SUMMARY OF HIGHLIGHTS AND RECOMMENDATIONS

The largest single sector of the U.S. economy is the production and distribution of food and fiber. If this sector is to perform up to its potential, providing an abundance of high quality products for domestic consumption and export, and rewarding all participants adequately, a wealth of economic information must be available to it. The Economic Research Service, in our judgment, has a major responsibility in providing that information.

ERS has a broad and sensitive mission to provide economic research and statistical information on the food and fiber sector, not otherwise available, to all who affect or are affected by the sector's structure, conduct, and performance and generally to improve both the economic understanding of the sector and its performance. For some kinds of information, ERS bears primary responsibility. For some others, mainly raw statistical data, ERS itself generally depends on other agencies. ERS often complements and supplements the work of other government agencies, land grant universities and experiment stations, and private organizations in assuring that the total information flow is adequate and reliable.

Briefly, the mission for commercial agriculture focuses on the following program activities:

1. Developing and publishing current information on the food and fiber industry not otherwise made available, plus making certain projections for the future.
2. Conducting research to determine and quantify functional relationships among economic variables bearing upon the supply, demand, utilization and trade of products and resources in the food and fiber sector in both national and international dimensions.
3. Evaluating and appraising the performance of the food and fiber sector and its subsets with respect to such criteria as economic efficiency, distribution of returns to resources and participants in the sector, and external impacts. These are essentially macro studies.
4. Conducting research into the economics of the firm, including management aspects.
5. Conducting research pertaining to the utilization of natural resources in the food and fiber sector and in rural areas.

6. Appraising the economic aspects of current and possible future public programs (national and international) with reference to impacts upon participants and resource use in the food and fiber sector and in rural areas.

In fulfilling this mission ERS has a dual role: to serve not only the executive and legislative branches of government but also private individuals and firms comprising the food and fiber sector. Although there is much complementarity, there is also potential competitiveness between the roles. It is important that neither role seriously overshadow the other.

Because of the multiple mission of ERS, the many programs which might be undertaken to serve diverse clientele needs, and the roles of ERS vis a vis other research and education institutions, determination of program priorities must be based on multiple criteria. We suggest the following:

1. Is the research consistent with the mission of ERS?
2. What is the comparative importance of the problem being addressed and the cost-effectiveness of the research?
3. Is the research additive? Can it be integrated with other research to lead to more generalized descriptions and analyses of problems of commercial agriculture, a particular commodity, or other economic research programs?
4. Should the research be conducted and supported at the Federal level or could it be more appropriately conducted and supported by land grant universities or private institutions?
5. Does the research add to economic knowledge?
6. Does the research develop new theory or methodology which permits improved estimates or improved understanding of the phenomena in question?
7. How useful has a research program been in the past? How extensively have research results been used and what effect have they had upon decisionmaking?
8. Is the research objective?

9. Can the research be completed in time to be useful to decisionmakers, and is there sufficient stability in the analysis to permit long-term use?
10. To what degree can uncertainty be eliminated and the penalty of making a wrong decision be reduced for the decisionmaker?

Research and Information Programs

Most of the major program areas needing modification transcend current division lines. These areas and our recommendations follow.

Data Systems--The current data system is inadequate to meet future research and information needs. There are voids in the current data system, and the conceptual foundations of the system are inadequate. We recommend that ERS:

1. Together with other agencies and organizations as appropriate, appraise future data requirements for research and information purposes with emphasis on the type, quantity, and quality of data needed and thoroughly examine the adequacy of current data series in light of such requirements.
2. Make wider and more effective use of data now available in government or elsewhere. Action agencies such as ASCS, AMS, FAS, FNS, and IRS have a wealth of data which ERS might tap more fully.
3. Develop more effective use of computer capacity and ADP techniques to improve data collection, management, and dissemination.
4. To the extent that additional funding is necessary to improve current data systems, collaborate with other agencies, particularly SRS, in submitting and justifying needs to the USDA, OMB, and the Congress.

Outlook, Situation, and Projections--The quality of this work is seriously threatened by inadequate data, inadequate staff, and inadequate supporting research. We recommend that ERS:

1. Add staff in ESAD or devise a more effective way to integrate and coordinate research activities with other Divisions to support the outlook function.

2. Place greater emphasis on updating supply, demand, and price analysis, in addition to improving forecasting models.
3. Invest more resources in developing and adapting research methodology to improve measurements of commodity, sectoral, and intersectoral relationships.
4. Review the outlook work in depth, emphasizing the type of information required by clientele; frequency, timing, and format of outlook reports; adequacy of delivery systems for outlook information; outlook responsibilities of various government agencies; need for long-term outlook projections; need for increased attention to outlook concerning U.S. agricultural trade; and purpose, format, and timing of the National Outlook Conference.

Structure and Performance--A major element of the dramatic structural changes occurring in the food and fiber sector is the tendency to centralize the marketing and production process. Concerns over these changes come to focus in the question, "Who will control agriculture in the future?" We believe ERS has a major responsibility to develop analyses and information that bear on this question. We recommend that ERS:

1. Strengthen and refocus its research program to address issues pertaining to (a) future structural configurations; (b) the potential economic efficiency, progressiveness, innovativeness, and conformance to standards of economic and social equity of possible configurations; and (c) policies and programs which may be needed to guide or regulate structure and performance.
2. In strengthening and reorienting research on structure and performance, provide for greater additivity and coherence of individual research efforts, more explicit consideration of structural and performance implications in agricultural policy and program analysis, less reliance on traditional methods of economic research, and greater appreciation of the economic, institutional, and social dimensions of structural changes.
3. Develop more adequate measures of performance of the sector that include not only traditional efficiency concepts but also qualitative aspects such as product quality, consumer satisfaction, and product variety.

4. Organize and mass resources in a manner consistent with the magnitude and complexity of the problem and provide for closer coordination between production and marketing research.

Agricultural Policy and Program Analysis--USDA has more than 80 identifiable programs related to commercial agriculture. Included are programs to improve farm income, advance technology and increase efficiency in agriculture, and numerous regulatory and information activities.

Two types of research are needed: (1) studies to determine cost and effectiveness of ongoing and alternative programs to serve alternative goals, (2) studies to determine and measure economic variables and their interactions in the economic framework of the program.

With respect to future farm income programs and policies, two major problems are dominant. One is the continuing problem of "excess productive capacity." The other is the widening gap between the incomes of a relatively few large farms and many small farms with limited income producing capability. In focusing on issues related to these problems it is essential that distributive as well as aggregate income effects and social costs and benefits are taken into account. Some of the basic issues ERS should conduct research on are:

1. The effects of present farm programs on returns to land, labor, and capital and the value of these returns to resource owners.
2. The effect of diversionary payments to farmers on production, aggregate farm income, distribution of income, and government costs.
3. The most cost-effective way of achieving a supply-demand balance that will also achieve income, price, and community objectives.
4. The best use of the excess capacity in U.S. agriculture to increase employment in rural areas and lower consumer prices while maintaining farm income.

With respect to the other types of government programs, ERS should be prepared to evaluate the cost and social effectiveness of these programs and appraise the economic feasibility of alternative programs to achieve particular objectives. These appraisals should take into account favorable and unfavorable

effects of the programs. Analysis of programs to increase production efficiency should, for example, take into consideration the budgetary impact on commodity programs, the social cost of displacing farm labor, as well as the benefits to producers and consumers. Analyses should identify carefully the recipients of benefits and the distribution of benefits among them. This may be as important to the decisionmaker as is cost-effectiveness.

Foreign Development and Trade--The international arena is becoming increasingly important to the commercial food and fiber sector of U.S. agriculture. The changing economic climate, emerging demands for agricultural commodities, increased production by developing countries, and increasing international coordination of national policies have important implications for U.S. agriculture. We recommend that ERS:

1. Develop a program to sharpen the understanding of forces that influence the export demand for U.S. farm commodities; determine how prices are developed in international markets; specify the principal aggregate supply, demand, and price determinants for major export programs; and appraise the effects of agricultural and general economic development on the world commodity markets and trade flows.
2. Evaluate the likely short- and long-term implications of foreign economic growth, foreign agricultural development, and the rapidly changing international situation on the future of U.S. commercial agriculture.
3. Develop a coordinated and integrated policy-oriented research and information program to address the interrelationships between domestic agricultural programs and foreign agricultural programs and trade policies and appraise the implications for future U.S. agricultural programs and trade policies.
4. Evaluate the cost-effectiveness of present and potential government programs designed to increase U.S. exports and assist in adjusting domestic supply-demand imbalance.

Environmental Quality Research--There is growing concern that the resources available for producing food and fiber will be constricted for a variety of physical, social, and economic reasons. ERS must be prepared to do more to assess the economic impacts of environmental policies on commercial agriculture. We recommend that ERS:

1. Develop a research program to identify sources and magnitudes of agricultural wastes; develop objective measures of their impact on the environment; evaluate potential uses for agricultural wastes; determine the impact of alternative environmental quality standards or restrictions on the structure and location of agricultural production and processing industries, and on farm production, income, and prices; assess the economic constraints of new technology and management practices to reduce pollution from farm and processing activities; and evaluate alternative institutional arrangements to finance and manage agricultural pollution abatement.
2. In developing this program, provide for an interdisciplinary approach, and review current work in MED and FPED on production and marketing efficiency, etc., to determine need for a reordering of priorities and a restructuring of programs.

Consumer Related Issues--Consumer issues have a direct effect on agriculture and are, therefore, an important component of the ERS research program for commercial agriculture. We recommend that ERS:

1. Without becoming a consumer advocate, recognize the importance of the consumer in its research and information program in the food and fiber sector.
2. Assist in determining and interpreting consumer needs and attitudes and generally facilitate communication flows between consumers and producers, Congress, and agribusinesses.
3. Make a greater effort to give consumers better information to help them buy food rationally.
4. Be more concerned with analyzing selectively the effectiveness of USDA and other government programs designed to: safeguard the consumer, ensure that the quantities and qualities of products desired are available at reasonable prices, provide food or the means to acquire food to disadvantaged groups, and provide the consumer with a basis to assess product quality, freshness, and nutritive content.

5. Quantify cost-benefit ratios and develop impact statements on major consumer-oriented proposals prior to issuance of legislation.

Micro-Oriented Research--While there has been a relative decline in resources applied to micro-oriented research in ERS, there is still a need for this information. Micro research serves two main purposes: (1) as building blocks or inputs for aggregate economic analysis, and (2) as an input to decisionmaking in the individual household plant or firm. We believe ERS must continue to conduct, stimulate or support micro research for the first major purpose. The second major purpose is primarily the responsibility of the private sector. There are two major questions ERS must address:

1. What kind, quantity, and quality of micro data and analysis does ERS need to fulfill its missions?
2. How can it ensure the timely development of those data and analyses at minimum cost?

Obviously, ERS must first identify its micro data and analysis needs before seeking ways to obtain the required information. We recommend that ERS explore and experiment with new arrangements. ERS could contract for specific pieces of research or data as they occasionally do now. However, ERS can go beyond this and develop arrangements to share data and analytical tools and the costs associated. Barter arrangements are another possibility. For example, colleges might agree to provide data if ERS in return would use its research capabilities to analyze problems of particular interest to their States.

ERS Relationships With Land Grant Colleges

Although much of the historical relationship between ERS and the land grant colleges persists, fundamental forces are exerting pressure to alter that relationship. Increasing skepticism of the role of science in society and the emergence of pressing, complex social problems have contributed to uncertainty, broadened the range of research inquiry, and led to searches for a new identity and new research approaches in both ERS and the colleges.

As a consequence, research management is becoming more difficult, as is the task of identifying the relative research advantages of each institution. Furthermore, the need for expanded programs and immediate action is felt at a time of increasing budgetary pressure within ERS and the universities. In combination, these forces have strained traditional ERS-land grant college relationships and tended to encourage independent rather than joint action.

Another source of strain on ERS-college relationships is the growing emphasis in ERS on service-type staff functions and, associated with that, a reorientation of the role of the ERS field staff to that of a supportive arm of the Washington office. Each of these changes affect the professional ties between researchers of the two institutions and give rise to questions as to whether ERS is becoming a self-contained agency and forfeiting its professional leadership role.

To clarify and strengthen relationships with the colleges, we recommend that ERS:

1. Undertake discussions with the land grant colleges to improve the understanding of research roles and responsibilities of the respective institutions. These discussions should develop improved mutual understanding of the directions which each may take and dispel mistaken images which each party may hold relative to the role and capabilities of the other.
2. Develop a new brand of cooperation with the land grant colleges designed to increase the complementarity of their respective research programs. There is the need to develop and experiment with new working relationships. Here we are thinking of arrangements such as contracting for specific pieces of research, sharing data and analytical tools, and encouraging new complementarities in areas such as policy research.
3. Establish a clear-cut policy and develop a new perspective concerning the role of its field staff. We underscore the importance of a clear-cut field policy. The current uncertainty, though not entirely new, puts constant pressure on morale and makes it difficult for ERS to get on with its mission. A "band-aid" approach will not suffice. The decision now required must not be deferred too long.

Research Organization and Management

Numerous criticisms of ERS performance were expressed to the Committee. Some pertained to orientation and management of the research program: excessive researcher autonomy in selecting and designing research, organizing research around administrative entities rather than missions, and adhering to an academic philosophy which has resulted in research being designed for and presented to members of the profession rather than being addressed to the needs of the broader group of clientele ERS must serve. Other criticisms were:

failing to respond to the needs of farmers and industry; failing to provide timely responses to requests; being inadequately aware of changes in the food and fiber sector; inadequately anticipating research needs; presenting too little relevant information in a form readily useful by Department administrators and other decision-makers; not being able to effectively inject economic intelligence into the decisionmaking system; and not understanding the programs of the Department.

Although we do not fully concur with these judgments or agree that all such deficiencies should be attributed solely to ERS, we believe several steps should be taken in ERS to improve its organization, communication, and management processes. We recommend that ERS:

1. Develop explicit and operationally meaningful mission statements and proceed to instill an understanding and appreciation of their nature and complexity among ERS staff.
2. Undertake more formal and systematic research planning and program evaluation. A related need is to develop more effective mechanisms for feedback from users of ERS research and information.
3. Improve communication within ERS and between ERS and action agencies, Office of the Secretary, and institutions in the private sector.
4. Develop management processes to secure more effective coordination among the several Divisions having research and information programs for commercial agriculture.
5. Explore the feasibility of exchanging staff with action agencies or detailing ERS staff to work with program managers in action agencies.
6. Establish a small staff in the Office of the Administrator to (1) identify emerging problems that command research attention, and (2) improve the interface between ERS and its clientele. To enhance the functions of this staff, it would be desirable for action agencies to establish similar staff or liaison capabilities to interact with ERS.

Finally, we suggest that a staff group located in the Office of the Secretary would provide a liaison that could catalyze the

flow of information between ERS and the Secretary's Office and help focus on research needs. This group would not replace the need for staff capacity in the ERS Administrator's Office, but would complement it.

PART I

AN OVERVIEW OF MISSIONS AND PROGRAMS OF
THE ECONOMIC RESEARCH SERVICE

The largest single sector of the U.S. economy is the production and distribution of food and fiber. If this sector is to perform up to its potential, providing an abundance of high-quality products for domestic consumption and export, and rewarding all participants adequately while reconciling divergent interests among them, a wealth of economic information must be available to it.

The Economic Research Service, in our judgment, has a major responsibility in providing that information. Its particular role in doing so delineates the mission of the agency.

This report proposes both principles and operating rules for making ERS a vital, progressive, effective agency for carrying out its missions with particular regard to commercial agriculture. With a view to improving program effectiveness, the report suggests certain redirections and changes in emphasis in current programs and sketches broad areas of inquiry which deserve high priority in the agency. Other sections examine the relationships among administrative entities within ERS, and those between ERS, other governmental agencies, and other research and educational institutions, particularly other agencies of USDA and the land grant universities and colleges.

The remainder of this chapter provides a broad but basic overview of the roles and responsibilities of ERS and sets forth criteria appropriate to the design, conduct, and evaluation of ERS programs for commercial agriculture.

The Institutional Setting of ERS

ERS missions and programs are influenced by and in turn exert influence upon the institutional environment in which the agency functions. Three basic institutional phenomena bear importantly upon the agency: the organization of the food and fiber sector, the organization of government, and the values and aspirations not only of the sector served but of society generally.

Food and Fiber Sector

The U.S. food and fiber sector beginning with supplying inputs to farming and ending with distribution to consumers is a complex, diverse and highly dynamic system. At its central core are 2 3/4 million farms of which approximately a million are commercial. Production and decisionmaking in this core are highly decentralized.

Serving the 2 3/4 million farms and vital to their efficient operation is a myriad of input, food processing and distribution industries. These complex and interrelated industries are characterized by higher levels of concentration than exist at the farm production level but generally are viewed to be strongly competitive.

In addition, a variety of public programs establish farm price and income floors and provide farm price and production stability. Other public programs facilitate production and marketing activities and regulate the economic environment of the sector. The sector is further influenced by the general economy and by international political and economic conditions.

This economic system requires a wealth of objective, timely, widely-dispersed economic information relevant to participants in the system. ERS bears major responsibility to provide such information--a responsibility which not only commits the organization to serving the needs of many different types of participants but also bears upon the manner in which it organizes and conducts its affairs. These responsibilities are threefold: (1) monitoring changes occurring in the political-economic-social environment within which the food and fiber sector operates, (2) analyzing the implications of such changes for various components of the system, and (3) reporting information on changes for use by various clientele.

If the food and fiber sector were organized in another fashion, as in a limited number of vertical combines or under direct government control, the mission, programs, and organization of ERS would be sharply different. Indeed, the manner in which ERS perceives and discharges its obligations to the currently decentralized system may influence whether decentralization remains the predominant form of organization in the food and fiber sector.

Government

Likewise, our system of government has a considerable element of decentralization under the federation principle. This is true geographically, as local and state governments have certain powers independent of the federal. It is true also of the Executive Branch, wherein wide authority is delegated to agencies (as Departments and Commissions) that service broad sectors. Thus, the United States Department of Agriculture is a focal point for resolving policy issues and administering programs for food and fiber, including research and education, in all their complexity and conflicts of interest. ERS therefore reflects the entire spectrum of issues arising in the food and fiber sector.

The organization of government is itself subject to change. Significantly, any major departure in the system of government would

bring a redefinition of the makeup and mission of ERS. This would be true if the direction of change were toward the European type of more centralized administration or if toward a more decentralized organization with more decisionmaking at the regional or State level.

Values and Goals

Obviously, all service activities such as those of ERS are carried out under the set of values and goals we subscribe to as a Nation. These range from the worth of the individual to goals of equity that are basic to farm income programs and to more specific program goals such as resource conservation. Such values and goals should bear importantly upon the substance, scope, and conduct of publicly supported programs as those of ERS. But economists all too frequently assume societal values and goals as given or immutable and beyond their concerns as scientists. Management must be cognizant of the importance of instilling a "clientele consciousness" and appreciation of changing clientele values and goals throughout ERS to maintain a progressive, responsive agency.

Changes in the Socio-Economic and Political Environment

A partial list of some particularly important economic, social, and political changes impinging upon the design and conduct of programs in ERS are:

1. Changes in the structure of the food and fiber sector. These changes are, in part, a result of attempts by industry to achieve better coordination and control over the production and marketing process through both horizontal and vertical integration. A related trend is the concentration of production and marketing activities in fewer but larger firms. These trends have raised concerns about who will control agriculture in the future and about shifts in relative economic power of participants in the production-marketing process. Concern about trends in the structure of agriculture is reflected in the demands that steps be taken to protect the family farm, small processors, and agricultural workers.
2. Demands that business and government decisionmakers take fuller account of the social and environmental consequences of their actions. Those who make these demands insist that business recognize social responsibilities by making a contribution to solving social problems. There is also insistence that evaluations of government programs take better account of externalities in addition to the costs and benefits to those directly involved. Some critics

allege that even when the magnitude of costs and benefits of government programs has been assessed, too little attention has been given to the distribution of these costs and benefits.

3. Changes in the international environment in which U.S. commercial agriculture must operate. These changes include the emergence of new and enlarged trading blocs and common market arrangements, shifts in the productive capacity of other countries resulting from new technology and new crop varieties, and trends in many nations to interlink international trade and domestic support policies. At the same time that these changes are creating difficulties for U.S. agricultural exports, further problems are created by U.S. pressures to restrict imports to resolve balance of payments problems and threats to domestic industries and employment. Looming on the horizon is the multinational corporation and the expansion of trade with Communist-bloc countries. Each has important implications for U.S. agriculture and agricultural trade.
4. Changes in consumer's expectations and their responses to economic matters. Food and fiber producers have always recognized their dependence on consumers, but consumer response has largely been expressed through price-guided choices. Now, consumers are not only demonstrating sharpened selectivity in their buying behavior but are discriminating as to identification of quality and safety and generally demanding greater recognition and consideration. They express themselves politically as well as in the market.
5. Public resistance to tax increases and resulting budgetary pressures and public insistence on greater cost effectiveness in social and economic action programs. These concerns have been a factor in limiting the growth of the ERS budget and in the continuing pressure for ERS to maximize the effectiveness of its own programs and assist in evaluating programs of other agencies within USDA.

The Missions of ERS

Thus, the ERS mission with respect to commercial agriculture is multiple, not singular. Furthermore, it should be more pragmatic than doctrinaire; more flexible, adaptable, and problem-oriented than stereotyped. It involves providing information for use by diverse clientele including suppliers of farm production inputs, farmers, farm laborers, marketers, consumers, and those responsible for the development and execution of public programs impinging upon the food and fiber system. In very broad terms the mission might be stated as follows:

to provide economic research and statistical information on the food and fiber sector, not otherwise available, to all who affect or are affected by the structure, conduct, and performance of that sector, and generally to improve the economic understanding and performance of that sector.

It is a broad and sensitive mission. It carries with it many admonitions for definition and support, admonitions directed to legislators and administrators in government, to the public, and to the agency itself.

ERS has primary responsibilities for some kinds of information. For some others, mainly raw statistical data, ERS itself generally depends on other agencies. ERS often complements and supplements the work of other government agencies, land grant universities and experiment stations, and private organizations in assuring that the total information flow is adequate and reliable.

We not only define the mission broadly but also emphasize that ERS must be attentive to the economic performance of all parts of the sector. Nevertheless, ERS should not concern itself with the interests of individual parts in disregard of their relation to the sector. This is a fundamental but subtle distinction. For example, we regard ERS as inquiring into the efficiency of producing and distributing food all the way to the consumer, including the adequacy of consumer knowledge as to prices, grades, and food programs, but it is not a consumer service agency as such. Likewise, ERS looks into many aspects of foreign trade in farm products but not the political considerations in foreign relations, although we must be cognizant of these in providing relevant economic intelligence.

A brief and incomplete enumeration of the ERS mission for commercial agriculture focuses on the following program activities:

1. Developing and publishing current information on the food and fiber industry not otherwise made available, plus making certain projections for the future.
2. Conducting research to determine and quantify functional relationships among economic variables bearing upon the supply, demand, utilization and trade of products and resources in the food and fiber sector in both national and international dimensions.
3. Evaluating and appraising the performance of the food and fiber sector and its subsets with respect to such criteria as economic efficiency, distribution of returns to resources and participants in the sector, and external impacts. These are essentially macro studies.

4. Conducting research into the economics of the firm, including management aspects.
5. Conducting research pertaining to the utilization of natural resources in the food and fiber sector and in rural areas.
6. Appraising the economic aspects of current and possible future public programs (national and international) with reference to impacts upon participants and resource use in the food and fiber sector and in rural areas.

In defining missions and evaluating ERS programs functionally rather than categorically or structurally, we recognize distinctive roles for the agency. ERS serves both the executive and legislative branches of government as well as private individuals and firms which comprise the food and fiber sector. Expressed differently, ERS performs a staff function for policymakers and administrators of USDA, other executive agencies, and the Congress. It also is a source of economic intelligence for the entire food and fiber sector.

This difference in clientele sometimes will lead to differences in subject matter provided for the respective clientele. In the broad sense, governmental programs are an integral part of the food and fiber sector, and distinctions are artificial. Certainly there is much complementarity in basic subject matter. For example, coefficients of demand elasticity can be as relevant to farm groups and agribusiness as to government officials. However, other categories of economic information may be much more useful to government officials than to farmers, agribusiness, or consumers. This is particularly true of some short-term, perishable data and analyses of current operating programs.

This innocent-sounding difference in subject matter content does not portray fully the potential competitiveness or even conflict between the two roles. We believe there are major problems of relationship between these roles which affect research organization and management and thus deserve serious consideration. Among them are the following which we discuss in more detail later in the report.

1. Program Balance

ERS has multiple research service roles. It is important that no one of these roles seriously overshadows another. The danger is always great that a disproportionate share of time and talent may be given to servicing the short-term, immediate needs of Department officials and managers of action programs.

The time horizon is usually short for servicing program administrators, but long for research. This difference makes it easy for program-service demands to take precedence over research.

By the same token, proficient program servicing requires that it be backed up by sound research, including research into programs themselves. But, the "immediately-if-not-sooner" time horizon for many calls for servicing can jeopardize development of background studies needed for that servicing.

2. Program Planning

The multiplicity of the issues ERS is called upon to address heightens the need for planning and also makes effective planning more difficult. It is fundamental that the planning process capitalizes on the program complementarity that exists and provides for information on a timely basis.

3. Communication

Serious discrepancies may arise out of these matching handicaps: (1) action program administrators may not be skilled in utilizing economic studies in the form in which they are usually published; (2) many research economists may be unable to communicate effectively with program people. Further, the language for communicating economic knowledge to the public is not the same as that for reaching program administrators.

4. Political Sensitivity

Economic information that truly comes to grips with real-world problems may run afoul of beliefs and political positions of various groups and organizations both inside and outside government. This fact poses a problem of assuring that: (1) program-service information provided to administrators be politically neutral and objective; and (2) political considerations do not impede ERS from doing research and publishing information that relates to current economic problems of the food and fiber sector.

Establishing Program Priorities

Because of the multiple mission of ERS, the many programs which might be undertaken to serve diverse clientele needs, and the roles of ERS vis a vis other research and education institutions, determination of program priorities must be based on multiple criteria.

In a very real sense the Committee was faced with the same need in its evaluation of current and potential ERS programs. We identify below several criteria found useful in our evaluation process. We believe they are appropriate for use by ERS program administrators.

1. Is the research consistent with the mission of ERS and is it oriented to serve the needs of one or more clientele groups, i.e., is it relevant and can it be injected into the decisionmaking process?
2. What is the comparative importance of the problem being addressed? This includes looking at criteria such as number of persons or firms affected, volume of production or sales and potential payoff of research in relation to cost.
3. Is the research additive? Can it be integrated with other research to lead to more generalized descriptions and analyses of problems of commercial agriculture, a particular commodity, or other economic research programs?
4. Should the research be conducted and supported at the Federal level or could it be more appropriately conducted and supported by land grant universities or private institutions? In addressing this question it is necessary to consider who will benefit from the research, the roles and responsibilities of the land grant universities, and whether the beneficiaries might conduct their own research.
5. Does the research add to economic knowledge? Does it fill a void in economic knowledge?
6. Does the research develop new theory or methodology of potentially broad application? Does it illustrate the application of theory or methodology which permits improved estimates or improved understanding of the phenomena in question.
7. How useful has a research program been in the past? How extensively have research results been used and what effect have they had upon decisionmaking?
8. Is the research objective?
9. Can the research be completed in time to be useful to decisionmakers, and is there sufficient stability in the analysis to permit long-term use?
10. To what degree can uncertainty be eliminated and the penalty of making a wrong decision be reduced for the decisionmaker to whom the information is directed?

11. To what extent are activities required by law or appropriation?

The weighting of such criteria is a subjective, dynamic process. Weights will vary among individuals and will change as the institutional environment and programs of the organization evolve. Nevertheless, understanding, general acceptance, and application of such criteria are essential throughout the organization if program planning and establishment of priorities are to have meaning. Achieving these conditions in an organization as large and complex as ERS is one of the most difficult and sensitive roles of management. A mechanistic or autocratic approach will not suffice - neither will a purely individualistic approach. The need is for mechanisms and processes which provide for participation of individual researchers but incorporate constraints necessary to assure the fulfillment of the mission of the organization.

PART II
RESEARCH AND INFORMATION PROGRAMS

This section sets forth Committee views and recommendations on subject matter content and orientation of ERS programs, current and future, for commercial agriculture. We have singled out eight areas for discussion: (1) data systems, (2) outlook, situation and projections, (3) market structure and performance, (4) agricultural policy and program analysis, (5) foreign trade and development, (6) environmental quality and resource use, (7) consumer related issues, and (8) micro-oriented research. In each case we suggest certain changes in programs--changes in emphasis, orientation, or content.

Our review and appraisal is partial and selective. It focuses primarily upon research activities and data publication; the function of servicing the Secretary and action agencies with ad hoc program-related information is treated less fully. We do not evaluate in detail the program activity of each of the four divisions within our primary purview. Nor do we set forth fully designed, ready-to-be-implemented programs.

Instead, we identify major program areas, most of them transcending current division lines, where modification of programs seems desirable. We concern ourselves with primary focal points in programs, leaving to ERS determination the project and personnel adjustments needed to achieve suggested changes.

In listing the eight research areas, we are pointing not so much to allocations of time on a man-year basis as to infusing ERS with an appreciation of the forces of change that call for not just reassigning certain staff and allocating funds, but for redirecting a number of research undertakings. Our discussion below relative to structure and performance of the production-marketing system illustrates this. We need, to be sure, more information on structural changes that are underway. But with equal urgency we need to incorporate into virtually all work of ERS a sharpened perception of structural changes in the economy. Few kinds of ERS inquiry are unaffected.

Finally, we note that the order of presentation of our recommendations infers no ordering of priorities. We believe each to be important and of high priority.

Data Systems

Development and maintenance of comprehensive, well-designed data systems are crucial to the ERS mission. The quantity and quality of data are important determinants of the quantity and quality of research not only in ERS but for all of agricultural economic research. To effectively monitor performance of the food and fiber system, and to develop comprehensive, timely economic information systems for use in the public and private sectors, ERS must develop and maintain data which will permit accurate description and rigorous analysis of the structure and performance of the food and fiber system.

We question whether current data systems in ERS are adequate to meet current needs for economic analysis and information in the public and private sectors. We have even greater concern with respect to the adequacy of current data systems to meet future needs.

A recent report of the AAEA Committee on Economic Statistics expresses forcefully the nature of our concern with ERS data systems: "Our data systems are in deep trouble. ...It is ironic since the systems which produce our data have never had more sophisticated statistical capabilities. However, the demands we can make on the system are now outrunning our meager investment in its continued development. More importantly, the conceptual foundation of the system is crumbling--and has been for some time."

We have failed to keep pace in our data systems with the changing structure and organization of the food and fiber system--failed to keep pace conceptually and, in some cases, failed to collect and integrate data needed to fill known voids in data series.

Farms and marketing units are the traditional units of observation for data collection. But in many respects our current definition of a farm or marketing firm is unrealistic, inadequate, or even misleading. Increasingly, farmers are purchasing more services, creating problems in measuring factor productivity, production costs, and returns. Marketing firms are taking over many functions formerly performed on the farm, while at the same time farms are becoming more heterogeneous and functionally dissimilar.

Since the agricultural industry is composed of a series of sub-sectors, a new set of measures which conforms conceptually to the changing structure of the food and fiber system is needed. In addition there is the need of assessing the differential effects of this structure on people within and outside the system and developing information on how these people view the performance of the system. Meeting these needs will require imagination and innovation to obtain "nontraditional," sometimes qualitative information.

Even where the conceptual underpinnings of current data series are adequate, we note data voids which preclude sufficiently detailed statistics to permit adequate description and appraisal of performance in the food and fiber system. The Census of Agriculture is one such example. Apart from fundamental conceptual weaknesses, the Census simply does not provide enough detail to adequately understand and analyze changes in structure and performance in the farm sector.

The market basket series of ERS fails to provide enough information on cost components of marketing functions performed in major commodity subsectors. This deficiency was pinpointed by the National Commission on Food Marketing some 6 years ago.

Recently, the public press has focused on inadequacies in the ERS farm income series, inadequacies which allegedly result in over-estimation of annual farm income by nearly \$1 billion. Data concerning distribution of income within agriculture and returns to resources employed in agriculture are far from adequate in our judgment.

Several factors contribute to deficiencies in the ERS data system--availability of funds, willingness of sources to reveal detailed information, etc. Also, primary responsibility for collection of some types of data rests outside ERS in such agencies as SRS, AMS, Bureau of the Census, and Bureau of Labor Statistics. But ERS seems to have depended too heavily upon statisticians in other agencies to conceptualize and generate data series. ERS has devoted insufficient attention to identifying future data needs.

We have identified only a few of the major problems with the data base. ERS must go beyond this and take more effective and imaginative leadership in identifying additional gaps and conceptual limitations. In particular we urge that ERS take the following actions:

1. Conduct, in concert with other agencies and organizations as appropriate, a comprehensive appraisal of future data requirements for research and information purposes with emphasis on the type, quantity, and quality of data needed and thoroughly examine the adequacy of current data series in light of such requirements.^{1/}
2. Make wider and more effective use of data now available in government or elsewhere. Action agencies such as ASCS, AMS, FNS, and FAS have a wealth of data which ERS might tap more

^{1/} Structural changes in the food and fiber sector interfere with voluntary collection of data. Firms are less willing to submit data now than formerly. The time will come when acquisition of some types of data needed for public research and information purposes will be possible only by statute.--Harold F. Breimyer

fully. Greater use of data from the Internal Revenue Service would seem possible. ERS should assist such agencies in the design of retrieval systems that will yield data needed jointly by ERS and the action agency. We believe an increased understanding and appreciation of these needs on the part of the Secretary's Office would facilitate interagency coordination in developing required data.

Also, it may be possible to develop information from farm account records maintained in land grant colleges, to obtain relevant information from professional farm managers, and to tap the wide variety of surveys (including consumer surveys) periodically conducted by land grant colleges and other institutions.

3. Explore ways to utilize computer capacity and ADP techniques to improve data collection, management, and dissemination. Given the multiple uses of data there should be opportunities to make more imaginative and effective uses of ADP to improve data handling and timeliness in reporting.
4. To the extent that additional funding is necessary to improve current data systems, collaborate with other agencies, particularly SRS, in submitting and justifying needs to the USDA, OMB, and the Congress.

Outlook, Situation, and Projections

A vital and sensitive function performed in ERS is providing economic outlook information. The most visible products of this activity, the Situation Reports, are widely utilized by economists in the land grant universities, by decisionmakers in government, and by agricultural industry personnel. Less well known but a vital part of the staff function of ERS is the wide range of special appraisals and interpretive reports prepared for internal use by Department officials and the consultative services provided by ERS within the Department.

The importance and sensitivity of this mission should require no extensive elaboration. We only reiterate that changes in the structure of agriculture, in commodity markets, and in buyer-seller relationships have increased the need for marketwide objective information for maintenance of efficient, equitable markets.

The creation of the Outlook and Situation Board under leadership of ERS and its predecessor agencies to serve as a Departmentwide focal point for release of outlook information is evidence of the importance and sensitivity which the Department has attached historically to the outlook and supporting research functions. Although nearly all divisions of ERS contribute to the activity,

primary responsibility for underlying analysis and preparation of outlook reports has rested with the Economic and Statistical Analysis Division--a Division which over the years has been staffed by highly qualified researchers and marked by excellence of its research activities.

X We have considerable concern with respect to the current status and potential future performance of the outlook function in ERS unless the overall program is greatly strengthened. In part, our concern relates to the inadequacies of the data base in ERS as discussed in the preceding section. If these inadequacies are not remedied, the quality of outlook information and underlying research will deteriorate.

X However, our basic concern pertains to the dangerously low ebb to which the staff in ESAD has fallen without compensating program adjustments elsewhere in ERS. During the past decade the Division has been decimated by departure of key, highly qualified researchers. Those who remain appear so inundated with short-term service functions in the Department and with meeting Outlook and Situation report deadlines that little time remains to conduct research needed to bolster the outlook activity. The current investment in development or improvement of research methodology and in aggregate supply, demand, and price analysis in the Division seems to us incapable of supporting the scope and quality of outlook programs expected of ERS.

Our basic concern is not where outlook and related research activities are lodged among current administrative entities of ERS. Thus, our apprehension would be alleviated if there were substantial evidence that the "slack" in ESAD outlook-related research had been taken up by other divisions. But we find limited evidence of that having occurred. The Marketing Economics Division has created and staffed a Branch dealing with pricing and competition and retains a large number of commodity researchers in other branches. However, their activities seem peripheral at best to the research needed to undergird the outlook function. This leads us to two major recommendations:

1. The research program undergirding outlook should be strengthened immediately. This might be achieved by adding staff in ESAD either by addition of new employees or transfer of employees from other divisions of ERS. Alternatively, some way should be devised to more effectively integrate or coordinate research activities in other divisions, particularly the Marketing Economics and Farm Production Economics Divisions, with the outlook-related research needs and activities in ESAD. A third option is reorganization of the divisions to realign resources and programs to give greater support to the outlook function.

2. As the outlook-related research capacity is expanded, greater emphasis should be placed on updating commodity supply, demand, and price analysis and developing improved forecasting models, particularly short-term forecasting models. However, we wish to emphasize that the structural changes taking place in the economy are underappreciated. Conventional analytical techniques and model building, though not opposed, will not alone provide the analyses and information needed. Perhaps there is need for a few imaginative economists who can provide an interpretative input that departs from "dogma" in its approach to economic events. ERS should be investing a higher proportion of resources in the development or adaptation of research methodology to improve its ability to measure commodity, sectoral, and intersectoral economic relationships basic to understanding the performance of the food and fiber system and to effective forecasting and analysis of economic phenomena.

We have other concerns and suggestions relative to the outlook programs.

1. Of major importance is the question of what type of outlook information is most needed for decisionmaking by various clientele groups and what should be the role of ERS in providing that information? An indepth examination of such questions would be useful as a basis for strengthening ERS outlook programs.
2. A related issue is the number, frequency, and format of outlook reports. Regular reports are issued 4 or 5 times annually covering each of 12 commodity areas. In addition there are quarterly reports on farm income, demand and price, national food, marketing and transportation, and an outlook digest published 10 times yearly. Is this "optimum" in terms of numbers and frequency? Commodity subsectors are increasingly interdependent vertically and there has long been extensive intercommodity dependence. Should there be some consolidation of reports as a means of focusing more effectively on the interdependences among commodities and functions in the food and fiber system? An examination of such questions is in order.
3. The foregoing appraisals might be extended more broadly to examine the adequacy of the entire outlook and intelligence system, including both information injection and feedback components of the system. Very little use is made of information theory or the rapidly advancing communication technology in the design and conduct of ERS outlook programs. Appraisal of these opportunities and limited experimentation are encouraged.

4. ERS outlook information is primarily short-term oriented, i.e., 3-6 months. Given the time frame for decisionmaking in the private sector, the volatility of some agricultural commodity markets, and the "state of the art" of forecasting, primary emphasis on short-term outlook is appropriate. However, some additional effort might be directed to developing intermediate and longer-term projections as a basis for exploring possible outcomes of basic shifts in supply, demand, or public policies for agriculture.
5. There is insufficient emphasis on outlook and projections concerning U.S. agricultural exports and foreign demand and supply conditions as they impinge upon U.S. exports and imports. In this connection ERS and FAS might collaborate to make more effective use for outlook purposes of data and intelligence provided by Agricultural Attaches.
6. We encourage ERS, through the Outlook and Situation Board, to work more closely with other government agencies publishing statistical and economic information and to specifically identify outlook responsibilities of each. Of particular importance are regulations which govern ERS' responsibilities for publishing statistical and other economic information for USDA that originates in other agencies. Care should be exercised to ensure that conflicting data are not separately released by other agencies.^{1/} Examples are data on foreign trade and on commodity supply and disappearance. Although not a direct responsibility of ERS, there needs to be review of the purposes and procedures of the Acreage Marketing Guides.
7. Finally, we suggest ERS review the purposes, format, and timing of the National Agricultural Outlook Conference. The

^{1/} ERS outlook work has been impeded seriously by deficiencies of cooperation from other agencies of USDA. At times in various years, agencies have misrepresented or at least slanted the prospective situation for internally strategic purposes. For outlook to serve its highest purpose and achieve best reliability, the Outlook and Situation Board must be charged with responsibility and granted authority to enlist participation by all agencies of USDA--and to ensure that a single, unified report and projection emanate from the Department.--Harold F. Breimyer and Ronald D. Knutson

decision to hold the National Conference in February rather than November limits the usefulness of the Conference.^{1/}

Market Structure and Performance

Dramatic structural changes are taking place in the food and fiber sector. Production, processing, and distribution firms are growing in size and operational complexity. A major element of this growth is the increasing tendency to centralize coordination and control of marketing and production. This centralization extends both vertically and horizontally in the sector.

Of the many questions that arise from such changes, some fundamental ones include: (1) What are possible future structural configurations of the sector? (2) Will these systems be economically efficient, progressive, innovative, responsive to participant needs, and conform to society's standards of economic and social equity? (3) How will these systems affect the traditional exchange processes and methods of value determination, and what will be required as replacements if they fail to meet future needs? (4) How will the economic and social welfare of participants and others be affected by changing structures? (5) What policy, program, or institutional changes may be needed to guide or regulate structural change and performance?

Concern over structural change comes to focus in a question now being posed with increasing frequency: Who will control agriculture in the future? Many who pose that question fear that centrally coordinated and integrated systems will irreversibly alter the decentralized character of the farm sector to the economic and social disadvantages of farmers, laborers, rural communities, and consumers.

Inherent in the questions is the premise that the industry's future structure is not predetermined; it can be shaped by private and public choice and action. We believe that ERS, the largest publicly funded economic research organization in the Nation, bears major responsibility in examining these questions and developing information to answer them. Meeting that responsibility calls for refocusing some ERS programs, committing a larger professional resource to addressing the questions, intensifying the research planning effort, and coordinating research closely both within the agency and with other agencies.

^{1/} Regional Outlook Conferences are held in the fall for extension workers. Opening these Conferences to all interested parties could be an excellent alternative to holding the National Outlook Conference in November and conceivably could make that Conference unnecessary.--
Carleton C. Dennis

In recommending a strengthening of the research program focusing on issues growing out of structural change, we are not calling so much for new theory or research methods (though some of each may be needed) or even for new research programs. Rather, we call for: (1) reorientation of the research approach to focus more specifically and adequately upon the questions at issue; (2) development of a long-range program framework providing for greater additivity and coherence of individual research efforts; (3) more explicit consideration of structural and performance implications in agricultural policy and program analyses; (4) less reliance by researchers upon traditional methods of economic research; and (5) greater appreciation of the economic, institutional, and social dimensions of the questions at hand.

We have not attempted to develop the comprehensive program framework we advocate; ERS and the land grant colleges should do so. We offer the following comments for consideration in that effort.

1. Many of the so-called structural analyses of the food and fiber industry have consisted of little more than determining the number, size distribution, and concentration ratios of firms in the sector. Such studies have been interesting but costly and of very limited value to decisionmakers in either the public or private sector of the industry. We believe this type of descriptive work should receive low priority in ERS.

We do not suggest there is no need for further description of structural attributes of the food and fiber sector. On the contrary, a substantial part of our inability to address meaningfully the types of questions posed above is associated with our lack of knowledge of how the system is structured and operates. We distinguish between description which permits better understanding of causes of structural change and the processes and mechanisms by which firms relate to each other and those descriptive endeavors that are purely numerical or mechanical and from which no sound, useful inferences can be drawn. For example, very little is known about mechanisms, processes and motives of vertical and conglomerate integration in the food industry by nonfood firms. Description of such elements, if done perceptively and purposefully, would enhance understanding of the system and provide a basis for formulating hypotheses for further testing.

One of the reasons for the limited usefulness of structural analysis has been the too strict and unimaginative application of the structure-conduct-performance theoretical constructs. "Number counting" was supported on the theory that inferences concerning conduct and performance could be drawn from such numbers. But these causal relationships are tenuous and based mainly on unsubstantiated hypothesis.

2. With some recasting and reorientation ERS could mold many of the current and planned research activities into the program we are suggesting. Several interdivisional projects are in progress or in the planning stage to examine performance of selected commodity subsectors. These projects could become integral parts of the overall program we have suggested. But we are concerned with the methods and orientation of such studies and with the prevailing view that they will produce answers to many of the questions which will arise about structure and performance.

As a concept, the subsector systems approach may have much to offer and should be supported. The danger, however, is that the effort will become too mechanical and aimed more at generating internal coefficients and developing elegant econometric models than at identifying basic economic forces, determining how these forces work, and answering the key economic-social questions. We doubt seriously that any subsector model will answer many of the highly complex questions that exist today, even in a single subsector. Further, many of the issues we have posed require examination from a functional, cross-commodity viewpoint. We advocate a mix of research approaches and methodologies adapted to the particular problems of the food and fiber sector.

Other elements of the current program which might be blended into the proposed research effort include parts of FPED and ESAD work on supply analysis, the demand and pricing research of ESAD and MED, as well as some facets of the work on international trade, marketing margins, cost and efficiency, and finance.

Parenthetically, we note very little research in ERS concerning food retailing and wholesaling beyond that associated with collection of margin and cost data. Given the extremely critical position of retailers and wholesalers in the food industry some increased emphasis on these functions is in order.

3. Far too little attention has been given to developing adequate measures of performance, including aspects such as levels of technical efficiency experienced in markets, innovation, variety, product quality, consumer satisfaction, and labor impacts. We have mentioned the inadequacy of information on cost and profit components of marketing and distribution margins for major commodities. Those voids should be filled as quickly as possible. Also, comparable types of information concerning the farm

production sector should be integrated with data on the marketing and distribution sector, perhaps in a value-added schema, to permit identification of cost components throughout the production-marketing system for major commodities or groups of commodities. Beyond these needs, we suggest the agency review the need for expanded and improved measures of market performance and develop a strategy for meeting those needs.

4. Many of the changes in agriculture today involve closer vertical and horizontal coordination between the production and marketing of farm products and agricultural requisites. Should not ERS likewise provide for closer coordination between production and marketing research? This will entail a substantial shift in focus of the ERS program. Involved would be a research framework which is coherent, ensures additivity of individual efforts, and provides adequate administrative techniques for coordination and control. To obtain this type of program ERS must be prepared to mass research resources in a manner and extent consistent with the problem.

Agricultural Policy and Program Analysis

USDA has more than 80 identifiable programs related to commercial agriculture. Included are programs to improve farm income, advance technology and increase efficiency in agriculture, and numerous regulatory and information activities. ERS has a major obligation to conduct research and provide information to meet the needs of the Secretary and agencies responsible for operating these programs.

Two types of research are needed: (1) studies to determine cost and effectiveness of ongoing and alternative programs to serve alternative goals, (2) studies to determine and measure economic variables and their interactions in the economic framework of the program. Results of the first type of research are likely to be of primary although not exclusive value in the Department. The second, which is prerequisite to the first, yields information for a variety of purposes and clientele and includes many of the research and information activities discussed elsewhere in this section.

The discussion which follows focuses primarily upon questions of broad policy and program strategy. It does not cover some of the detailed questions that individual program managers might ask. With varying degrees of specificity the discussion reflects on priorities that are needed to turn today's sometimes fragmented and uncoordinated economic research efforts into a program that would provide information related to some major public policy and program issues.

Farm Income Programs

The primary goal of farm income programs is to help provide farmers with the opportunity to earn incomes consistent with their abilities and resources. The Department's programs that help accomplish this objective include: annual and long-term acreage diversion programs to balance production with requirements; income and incentive payments to supplement market returns; supports to provide a floor under farm product prices; subsidized loans to needy farmers unable to obtain credit from commercial sources; all-risk crop insurance; and farm income related research and extension programs.

Demand analysis has received considerable emphasis in the past both in ERS and in the universities. For some commodities and products fairly reliable estimates on utilization, consumption, income and price elasticities of demand are available. For other commodities such as livestock and dairy products important shifts in demand appear to have occurred and further research is needed to determine the nature of prevailing demand. Knowledge about supply-price responses or how farmers respond to various program incentives and alternative program operations is still inadequate.

Considerable work has been done by both USDA and land grant colleges in analyzing the costs and effects of alternative types of farm programs. These studies generally deal with aggregate income and general price levels and seldom consider the distribution of farm income or the impact on hired workers. To provide a more meaningful basis for determining program changes, evaluation of alternative programs should consider the distributive as well as aggregate income effects.

Knowledge about the economic forces that influence income distribution is generally inadequate; yet, that is precisely what most public programs attempt to do. Data are needed to identify those who benefit and the extent to which they benefit from present farm programs and how these may be changed to more nearly meet the Department's objectives. Information is particularly needed about the economic and social characteristics of low-income farmers and hired farm workers, and how these compare with others in the population of rural poor and how their situation can be modified. ERS has made significant contributions to the general understanding of the small, low-income farm problems. We note especially the study of off-farm income of farmers. It is important that ERS build on these contributions and not let them become obsolete. We need to know more about the small farmer and his needs.

Generally, consideration has been given only to the direct government costs of farm income programs. There is usually little attention to the overall system costs and the real cost to society. The incidence of cost can vary widely between programs financed by the Treasury, those financed by higher market prices, and those financed by the beneficiaries.

Two problems dominate the concern for future farm income programs and policies. One is the continuing problem of "excess productive capacity" in relation to the growth in demand at "desired" prices. The other is the widening gap between the incomes of a relatively few large farms and the many small farms with a limited income producing capability. A third problem of emerging concern--the future structure and control of agriculture--was discussed in the preceding section.

Most of the high-priority research and analytical needs for the next few years are related to these problems. A partial list of questions include:

- What are or should be the explicit goals and objectives of the farm income programs?
- What effects do present farm programs have on the returns to land, labor and capital and the value of these returns to resource owners?
- What effect do diversionary payments to farmers have on production, aggregate farm income, distribution of income, government costs, etc.?
- What is the most cost-effective way of achieving a supply-demand balance that will also achieve income, price, and community objectives?
- What is the present resource base in agriculture and rural America, and how can it be most effectively utilized?
- What would be the effect of increased reliance on freer markets for commercial family farmers? For communities? For consumers?
- What alternative programs could most effectively help the small farmers? The hired farm worker?
- What is the impact of the Farm Credit programs on the future structure of agriculture?
- Who gains and who loses from agricultural product promotion? From Section 32 purchases? From marketing orders and agreements? From farmer bargaining power?

- How can the "excess" capacity in U.S. agriculture best be utilized to increase employment in rural areas and lower consumer prices while maintaining farm income?
- What are the cross relationships among various commodities with respect to supply and demand, and how are various government programs affected by such relationships?

Other Agricultural Programs

In addition to farm income programs, the Department supports a wide variety of other programs. There are extensive research programs geared to provide a continuous flow of new technology to farms and related industries. Much of this research is biological and physical research aimed to maintain the long-run producing capability of farm enterprises, to develop new products and new uses for old ones, and to provide consumers with low-cost food and fiber.

There are also programs generally designed to improve the performance of the marketing system. This type of program encompasses market information, developing and servicing farmer cooperatives, regulatory activities, grading, and other types of service activities to improve the competitive position of farmers in the marketplace.

ERS should be prepared to evaluate the cost and social effectiveness of these programs and appraise the economic feasibility of alternative programs to achieve particular objectives. These appraisals should take into account favorable and unfavorable effects of the programs. Analysis of programs to increase production efficiency should, for example, take into consideration the budgetary impact on commodity programs, the social cost of displacing farm labor, as well as the benefits to producers and consumers. Analyses should identify carefully the recipients of benefits and the distribution of benefits among them. This may be as important to the decisionmaker as is cost-effectiveness.

Additionally, more needs to be known about the nature of supply, demand, and price-making forces not only for the farm commodities being traded, but also for the variety of services and product modifications provided by the intermediaries between the producer and consumer. This research should closely specify the economic framework in which the Department's programs operate and help identify variables that can be influenced by program design.

Some specific research needs:

- Some believe that a grading theory needs to be developed which will bear on questions such as: the optimum number of grades needed to enlighten buyers and the extent to which discrimination through sorting and grading increases farmers' or marketers' returns.

- One of the most prominent issues and perhaps the hardest to understand is the question of market power for farmers-- its limits and its possibilities for improving prices and market returns. This obviously depends upon the form and completeness of collective action in: grading, supply control, price and market discrimination, sorting, bargaining, information research, scale operations, etc.
- A need exists for analysis of market fluctuations to guide USDA regulatory activities in detecting illegal practices. For example, to what extent can observed price fluctuations indicate deliberate manipulation rather than "normal" market variance? Or, what market conditions are "unusual" enough to warrant changes in program direction?
- Intercity food transportation costs total in excess of \$5 billion annually. Yet, only minimal economic research is directed toward appraisal of current and alternative transportation policies and programs as they relate to the food industry.

Beyond these specific proposals, there is a need for broad analysis of some fundamental trends. For example, the science fiction approach to food production may be more science and less fiction if powerful but land-short countries take strong leads. Should Israel pioneer and succeed in developing practical and cheap ways of refining edible protein from petroleum products, the potential impact on world nutrition and the U.S. agricultural industry could be enormous. Closer to home, and closer to practicality, the impact of prohibitions of chemical feed additives, medicines, pesticides, and fertilizers, could greatly change the economies of size and scale in both protein and carbohydrate production.

The Committee was unable to find much work on evaluating these possibilities. There is some effort to estimate the impact of short-run policies on short-term prices and costs. In addition, broad scale studies on these major forces for change and the impact of alternative developments should be receiving significant attention.

Foreign Trade and Development

The international arena is becoming increasingly important to the commercial food and fiber sector of U.S. agriculture. The changing economic climate, emerging demands for agricultural commodities, increased production by developing countries, and increasing international coordination of national policies--all these have short- and long-run implications for the well-being and growth of U.S. commercial agriculture. Research in this area is of high priority. In particular, we cite the following changes that are occurring and the research and information needs of both private and public decisionmakers.

The grouping of overseas economies into customs unions or common markets, particularly the European Common Market with its enlargement, together with the continuing development of overseas agricultures have resulted in modifications in our trade relationships with traditional trading partners. Such relationships will be further modified by additional economic alliances. The growth of multinational corporations with their ability to rapidly disseminate technology on an international scale to areas that have the capacity and ability to use it have brought some of the shorter-range issues into sharper focus. However, the longer-range implications of these types of developments on U.S. agriculture have not as yet been adequately explored. To some extent, our deepening balance of payments problem has given rise to a growing sentiment favoring a more isolationist trade policy as illustrated by the proposed Hartke-Burke legislation. These implications are inadequately understood by farmers, businesses supplying agriculture, businesses processing and distributing agricultural commodities, policymakers and administrators, as well as the general public.

The principal research effort appears to be primarily directed toward countries as units of inquiry rather than the estimation of the export demand for U.S. agricultural commodities. Also, there has been insufficient effort to relate and interpret overseas developments to the ultimate chain of consequences for U.S. agriculture. The firms making up commercial agriculture in the United States tend to be preoccupied with short-range economic developments, matters more nearly related to current market information and immediate near-term outlook. ERS could provide a valuable service by making commercial agriculture more aware of the longer-range implications of the economic and agricultural developments taking place throughout the world. This would involve the consideration of the long-run position of U.S. agricultural commodities in world trade and implications for the long-range allocation of resources to agricultural production within the United States. This, in turn, would involve an analysis of the possible interaction and change in the structure and organization of U.S. commercial agriculture as it adapts to the changing international economic environment.

There is a great need to sharpen understanding of the forces that influence the export demand for U.S. farm commodities, especially those for which domestic supply-management is an important factor in maintaining U.S. farm prices and incomes. Comparatively little is known of the way in which prices are determined in the various international commodity markets or of the degree to which the United States can influence its export volume with alternative export strategies. The priority needs are for research to simulate and specify the principal aggregate international supply, demand,

and price determinants for the major export commodities. Recognition and an understanding of the implications of institutional characteristics are also of considerable importance.^{1/}

Studies specifying the important economic coefficients in international trade are essential for evaluating costs and effectiveness of current and prospective U.S. export programs. They are especially important for choosing between the alternative goals of quantity exported versus the dollar earnings from exports and are essential to understanding the nature of competition and the degree to which the structure permits the United States to influence world prices and U.S. exports.

The primary economic goal of USDA's export programs has been to increase current and prospective exports of U.S. agricultural products, giving some consideration to foreign exchange earnings. These goals are pursued fairly directly, commodity by commodity, through an interrelated set of programs involving market promotion, various concessions on price and terms of sale, market information, and negotiations for an improved trade climate. These goals are also pursued through food and agricultural development assistance to poor countries, expecting that improvements in income and purchasing power will ultimately benefit U.S. trade. In some cases, however, the trade benefits are clearly secondary to the humanitarian, social, and political objectives.

Although much research has been done in the name of foreign agricultural trade, very little of it has directly focused on the Department's programs. Frequently the work has gone little beyond the accumulation of widely scattered facts and manipulation of secondary statistics in an intuitive rather than in a rigorous, specified framework. Much of the research allied to international trade has consisted of isolated country studies which, in general, have not been coordinated and combined in an overall analysis of the international marketing and production situation.

^{1/} The opening line of this paragraph is correct but the language that follows is overly traditional. One may well ask whether "international commodity markets" any longer hold meaning. International trade is so entangled in trading blocs, currency exchange regulations, domestic trade controls, and other institutional factors that to pose the issues in traditional language can point the researcher off in the wrong direction.

With regard to the entire section, it is tempting to confine ERS inquiries to purely commercial considerations. In reality, no nation makes trade policy on hard dollars-and-cents criteria alone. Nor should it. ERS might be well advised to recognize, with some appreciation, the noneconomic considerations that affect the U.S. trade posture in the world.--Harold F. Breimyer, Carleton C. Dennis, and W. Neill Schaller

Comparatively little is known about the influence of various levels of export subsidies on demand for and sales of U.S. farm products. The comparative effectiveness of general versus destination subsidies needs to be studied. Even for P.L. 480, where the Department has the authority to tighten or loosen the terms and conditions of sale, little is known about the economic constraints that cause recipients to react to such variances. Not enough is known about the variables influencing developing nations' demands for agricultural imports, their demands for long- or short-term credit, or the importance of food aid and self-help to American agriculture.

The most publicized and glamorized of the Department's international programs are the efforts to negotiate an improved political and economic climate for "liberalization" of world trade. Another round of negotiations is expected to begin next year. However, the economic impact of these efforts is probably less understood than for most other programs. The impacts of tariff negotiations, moral suasion, political leverage, and other such activities have not been determined. Although the USDA expenditures have been small, the economic consequences can be large. Thus, there is a need to reassess the U.S. objectives and those of its trading partners to determine the probable effectiveness of such efforts and to determine a set of alternatives for U.S. action in the event that the next negotiating round fails to stop the monopolistic trends in world agricultural trade.

Some of the more specific issues:

- Where are the U.S. export opportunities and what strategies should be employed to exploit them?
- How do domestic policies of foreign countries affect U.S. export opportunities?
- What are the institutional characteristics and constraints of foreign markets?
- What are the land-use capabilities and production potentials in countries producing competitive products?
- What are the alternatives to trade liberalization?
- What is the cost-effectiveness of overseas market development projects?

-- How can P.L. 480 be used more effectively in developing U.S. commercial trade?

There have been deficiencies in research content, focus, and scope of foreign trade and development research in ERS. The traditional organization of ERS research into units concerned with international questions and units concerned strictly with domestic questions has contributed to the lack of effective coordination of research involving both areas. Improved coordination among these administrative units is essential if adequate appraisals are to be made of the impacts on domestic agriculture of the many impending changes in world trade and development.

Environmental Quality and Resource Use

We note with approval the increased emphasis in ERS on environmental quality and resource use issues. We believe even further emphasis will be needed in the future to address a variety of policy-related issues of crucial importance to commercial agriculture and to society.

Research related to environmental quality and resource use currently is dispersed among four ERS divisions. Two of those divisions--Natural Resource Economics and Economic Development--were beyond the purview of this Committee. Our review of programs is, therefore, partial and with primary focus upon research and information needs of commercial agriculture as it may be impacted by environmental quality and resource use policies and programs. We recognize that environmental and resource use issues impinging upon the commercial food and fiber sector have dimensions and implications extending far beyond that sector. We encourage ERS to address the broader aspects of issues which we identify below.

There is growing concern that the resources available for producing food and fiber may be constricted for a variety of physical, social, economic, and political reasons. A case in point is the future use of fertilizers, insecticides, herbicides, and feed additives. There exists the possibility of restraints upon other cultural practices, including water control, irrigation, and the use and disposal of solid wastes. Also, techniques to control the environment such as hail suppression and rain inducement will become increasingly important.

The Nation faces dwindling mineral and other energy resources. This will directly affect agriculture, which is a high-energy user, and the types or sources of other inputs. The trend toward fabrication of foods which are resource-stretching has still other implications for agriculture. These and other issues impinge on the physical and economic productivity of commercial agriculture and warrant serious consideration by ERS researchers.

In addition, fundamental voids in the present information and evaluation system concerning resource use must be filled to permit the development of sound public policies and programs consistent with economic and social objectives. For example, more information is needed on how land resources are being used, our land use potential, and the impact of government commodity programs on land use. Additionally, broader questions related to multiple purpose land use are becoming national issues. ERS has a role in addressing these issues.

ERS has a special intragovernmental role in evaluating the impacts of environmental policies on commercial agriculture. Funds have been transferred from the Secretary's Office to ERS for it to engage in environmental impact studies. In addition, EPA and FDA have requested and/or participated with ERS in several studies to evaluate the economic consequences of curbing the use of chlordane and heptachlor, recycling animal wastes as feed, restricting the use of feed additives such as DES, and the impact of water pollution controls on the poultry processing industry. ERS has also been involved in a number of other studies such as the economic impact of canceling use of 2,4,5-T in rice production and costs to farmers of discontinuing the use of aldrin and dieldrin.

Studies of this nature will become increasingly important in the future and should command an increasing portion of ERS resources. The thrusts of research programs in this area appropriately could center around: (1) identifying sources and magnitudes of agricultural wastes and developing measures of their impact on the environment; (2) evaluating waste recycling, especially the economic feasibility of using waste materials to guard against exhaustion of certain mineral resources; (3) determining the impact of alternative environmental quality standards or restrictions in the use of selected production inputs on the structure and location of agricultural production and processing industries as well as the impact on farm production, income, and prices; (4) assessing the economic costs and effects of substitutes for agricultural chemicals currently in use, and of new technology and management practices to reduce pollution from farm and processing activities; (5) appraising various strategies for improving the environment and the cost effectiveness of these strategies; and (6) evaluating alternative types of institutional arrangements needed to finance and manage agricultural pollution abatement.

These thrusts are closely related to some elements of ongoing ERS research activities. In particular the production efficiency research projects are very closely related to questions of restricting use of agricultural chemicals and the imposition of waste disposal requirements. In turn, the work on marketing efficiency is closely related to the impact analyses which will be required as a result of imposition of environmental quality standards.

Much of the needed economic evaluation of waste disposal techniques, pesticide and herbicide restrictions, and feed additive restrictions should become part of the missions of FPED and MED, and should be carried out through an interdisciplinary approach involving biological and physical scientists. Work in this area also will need to be coordinated with NRED and EDD, but is distinct in that we view the work of NRED and EDD as focusing more on the impacts in a larger sectoral or societal framework.

MED and FPED have recognized these increasing demands and are developing programs and restructuring existing ones to address these issues. However, to meet the magnitude of the demands, additional reordering of research priorities and reallocation of resources will be needed. The current work on production and marketing efficiency, for example, might be appropriate for a reordering of priorities and a restructuring of programs.

Consumer Related Issues

ERS has important roles in developing and facilitating a flow of information among consumers, producers, agribusinesses, and government. One such role is in helping consumers understand and interpret the organization, conduct, and performance of the food and fiber sector. Conversely, ERS research and information programs should help determine and interpret consumer needs and attitudes and convey that information to the food and fiber industry. It is fundamental to the food and fiber industry that its products be well regarded by consumers and satisfy the full range of consumer demands including safety of product, reliability of supply, and reasonableness of price.

We do not perceive ERS as an agency for consumer advocacy. Nor do we call for more resources for research on consumer topics as such. Our most fundamental suggestion is that ERS researchers, including those studying policy, take consumer interests carefully into account in the design and conduct of their research. Stated differently, ERS should have a "consumer consciousness" whereby the subject area is examined with respect to its relationships or impact upon consumers as well as other participants in the food and fiber system.

Within this very general framework, several more specific functions are appropriate. From among the multitude of consumer-related issues such as retail food pricing policies, food additives, grade labeling, open dating, product proliferation, and advertising, careful selection of topics to research obviously is needed to conform to available resources. Certainly not all or even a sizable portion of such issues can be examined simultaneously.

An important function is analyzing proposed legislation and programs. ERS should examine potential costs and benefits of such programs prior to the adoption of legislation. As in other types of policy and program analysis, the importance of anticipatory research is stressed.

ERS should continue its role in analyzing programs such as grading, food inspection, and public food programs. The role includes evaluating the cost effectiveness of the programs and should include some measures of consumer satisfaction with the programs.

There is another small but useful role ERS might perform. ERS is in a position to develop certain kinds of information which could be of direct benefit to consumers in their food buying decisions. Examples of such information would be seasonal price and supply variations and comparison of prices between different types of stores. Here the ERS role primarily would be to develop the analyses, leaving the transmittal to others who have the specific responsibility for consumer education programs.

In summary, consumer related issues have a direct effect on agriculture and are therefore an important component of the ERS research program for commercial agriculture. Better indicators of consumer welfare as they relate to the price, quality, service, and convenience of food purchases are needed. The long-term interest of agriculture can best be served in a market economy if consumer interests and the impact of agricultural policies and programs on the consumer receive recognition and consideration.

Micro-Oriented Research

By micro-oriented research we mean the range of activities involving the collection and analysis of data pertaining to the economic behavior of the individual household, plant, or firm. It serves two main purposes: (1) as building blocks or inputs for aggregate economic analysis; and (2) in its own right as an input to decisionmaking in the individual household, plant, or firm.

In both ERS and the land grant universities there has been a relative, if not absolute, decline in resources applied to micro-oriented research in recent years. A number of factors have contributed to the decline, including changes in research priorities, the training and preferences of researchers, and increased capability of the private sector in economic research. The issue we see is

not whether ERS should terminate its involvement in, or support of, micro research. But there are two major questions which must be examined regarding ERS involvement in micro research: (1) what kind, quantity, and quality of micro data and analysis does ERS need to fulfill its obligations; and (2) how can it ensure the timely development of those data and analyses at minimum cost?

We believe ERS must continue to conduct, stimulate, or support micro research for the first major purpose we have cited--as inputs to aggregate economic analysis. Under certain, though very limited circumstances it may need to undertake, stimulate, or support micro research for the second major purpose cited above. However, most such research should be the responsibility of the private sector. We draw to the attention of ERS the following amplifications of the views expressed above.

1. As discussed in Part I, ERS has a unique leadership responsibility of ensuring that economic data and research voids are filled. While many individual firms can do their own research, others cannot. If the needs of the latter are not met elsewhere, ERS must step in. The mission we see for ERS includes this role. The responsibility is a leadership role, which means that ERS can and should stimulate or support others, like land grant universities, to do the necessary research.
2. While we talk of two main uses of micro research, there are times when both uses can be met by the same research. Thus, ERS may have to do a certain amount of micro research, ostensibly to serve individual decisionmakers, to ensure an adequate supply of the micro inputs it needs for aggregate economic intelligence.
3. Still another reason for ERS involvement in micro research applies where the purpose of the research is not only to generate aggregate intelligence but to say something about the distribution of aggregate variables, or the consequences of aggregate policy and other forces on different participants in the food and fiber system.

More and more, the crucial question posed to ERS is not "what is the total or average effect," but, "how are the effects distributed?" To deal with these distribution questions, the researcher must be able to trace economic variables up and down the aggregation ladder. This requires that his research include micro elements or characteristics.

4. Also, ERS should engage in micro research since it can provide a way to keep abreast of economic relationships within and between firms. Here we are thinking not so much of formal analysis or the use of sophisticated techniques, but rather the kind of micro research that

helps the analyst identify research problems at the level where individual decisions are made and consequences of change are felt.^{1/}

Some additional considerations:

1. Most agricultural economists have been reared on the logic that aggregate economic intelligence is more meaningful, and reliable, if it is built up from economic relationships at the micro level where individual decisions are made. Somehow, the alternative short-cut approach of analyzing relationships between aggregate variables is intellectually less satisfying. While the micro appeal is still quite strong among agricultural economists, we believe that there are many unsolved theoretical and practical problems of actually building up aggregate intelligence from micro data. Micro detail is costly and aggregation is time-consuming. More importantly, economics still seems to lack a truly operational theory of aggregation. We encourage ERS to address these problems in its research program.
2. Much of the concern about the cost and usefulness of micro research, as an input to aggregate analysis, seems to be associated with an uneasiness about the value of sophisticated models with a micro base. We suggest that the high cost of micro-based models is due in part to the failure to update the data on a periodic basis. If a model is worth developing for other than a one-time purpose, the periodic updating and continuing model improvements will offer substantial savings in the long run. Secondly, if the problem is one that requires fairly rapid analysis, appropriate models must be set up and tested ahead of time. No doubt, the difficulty of anticipating these research needs, and not having appropriate models "ready to go," contributes to some of the criticism of ERS' economic intelligence support of USDA programs and policy alternatives.
3. In regard to a related area, the Committee notes with approval the reduction in the commitment of resources to research projects involving the aggregation of the results

^{1/} I do not object to the message of this section, which is well balanced. However, throughout this report one principle seems overlooked, namely, the role of ERS, as an omnibus agency, to keep a number of kinds of research simmering on the back burner at all times, available to be stirred and heated when the need arises. The principle applies to much micro research. The New Rural Development program is illustrative: it now calls for enterprise feasibility information (nonfarm enterprises, mainly) as guide for development of various rural areas.--Harold F. Breimyer

of a series of micro level analyses based on the concept of "representative" firms to represent a sector of the agricultural economy. The Regional Adjustment Studies probably represent the most extensive application of this particular approach to the evaluation of questions of resource allocation. It is recognized that these studies represented an attempt to more fully take account of the effects of aggregate response in evaluating resource adjustments at the micro level. Such studies tend to be too abstract to be of much value as a guide to the allocation of resources for an individual firm and based upon too limited a concept of the determinant of resource adjustments to provide a useful measure of aggregate response.

Concluding Comments

We have pointed out the need for substantial changes in the current program content, orientation, and balance if ERS is to adequately meet the future research and information needs of the public and private sectors of the food and fiber industry. It is not surprising that some of our suggested changes are in accord with those outlined to the Committee by Division Directors. In those cases we hope our support will encourage ERS administrators to get on with the job.

Finally, we wish to mention the agricultural history work. This area of work is unique in government and one that the Committee feels deserves special recognition. We have no specific program recommendations except that consideration be given to exploiting the potential value of this work, in particular that portion which draws inferences to current events.

PART III

ERS RELATIONSHIPS WITH LAND GRANT COLLEGES

ERS and its predecessor agencies have long enjoyed close ties with the land grant universities. Over the years, agricultural economists in these institutions have had much in common, including the basic economic problems of agriculture, membership in the same profession, employment in public service, and Federal research funding.

Most agricultural economists in ERS have received training at land grant colleges. During the last two decades at many colleges one could scarcely distinguish between graduate students employed by ERS or its predecessor agencies, and those supported by the university's department of agricultural economics. A sizable number of ERS staff members were stationed at land grant colleges. ERS support of graduate students and the presence of ERS staff members in college departments of agricultural economics gave ERS a means of recruiting staff members and building professional competency.

Recruitment and staff building were not the only reasons for this close relationship. ERS and predecessor agencies saw that by locating personnel at the colleges, they could keep closer to the problems of agriculture. ERS field personnel had greater access than their Washington colleagues to scientists in other disciplines. They were the main link between Washington and the colleges in joint Federal-State research efforts and served frequently in important coordinating roles in regional research.

Such efforts often produced a "multiplier effect" in terms of research output for both the USDA and the colleges. This was especially true in the earlier days of farm management-related research and more recently in agricultural policy and regional development research. Much of the pioneering, applied research in these areas was done by USDA field personnel in cooperation with college economists, agronomists, and animal scientists. At least one policy research project based in Washington, the ERS "national model of production response," would not have been possible without this background and without ongoing participation of the field staff.

Growing Pressures for Change

Although much of the historical relationship between ERS and the land grant colleges persists, fundamental forces are exerting pressure to alter that relationship.

Both ERS and the colleges are operating in a climate quite different from that prevailing when their partnership first took form. The current climate is one of increasing public skepticism that science will find quick solutions to the growing number of problems facing society. This skepticism traces to the heightened public awareness of problems, which is in turn placing increasing pressure on the research capacities of both ERS and the universities. Not only are there pressures to provide more meaningful and timely research to continuing problems, but also demands to deal just as effectively with the mounting list of new problems. Increasingly, these are complex social problems involving questions of distribution, equity, and conflicts between the goals of different people.

This changing research climate affects ERS-land grant college relationships in various ways. Uncertainty itself is an important effect. Each institution is seeking an appropriate response to its particular needs. Even when the problem needing research is a common problem, the responses to it may differ among the colleges as well as between the colleges and ERS.

As a consequence, it is not easy to know what is really happening in the different institutions. Research management is becoming more difficult, as is the task of identifying the relative research advantages of different colleges compared to ERS (and vice versa). These institutions are under pressure to do something without delay and face a temptation to "go it alone," but there is uncertainty over what should be done. Furthermore, the need for expanded programs and immediate action is felt at a time of increasing budgetary pressure within ERS and the universities. It seems to be a time when more cooperation rather than independent action is called for.

Another effect of the changing climate has to do with research methodology. Tools that once seemed reasonable and useful for past research needs, or learning devices, are now found to be inappropriate to address the problems being posed. Efficiency models, a traditional strength of agricultural economics, are of questionable value when the research problem is a mixture of social and economic questions. Other tools are unsuitable because they require excessive data inputs, research time, or funds. The need for new research approaches is one more element of stress on existing research relationships.

Another source of strain on ERS-college relationships is the growing emphasis in ERS on service-type staff functions for USDA and other components of the Federal Government. Policy and program

evaluation in particular is seen by ERS as a function that can be performed most effectively by ERS personnel in Washington where policymakers are located. It is felt that while land grant colleges can contribute much to longer-run policy research (and some would add, can help to keep USDA research "honest") their economists are not in the best position to service short-term national policy research and information needs.

Associated with the service emphasis in ERS is a pressure to reorient the role of the ERS field staff. The reorientation includes a deemphasis in research on localized problems, as well as methodology building. It involves a change in the role of field personnel to a supportive function of providing general knowledge and judgments as inputs to Washington-based research. Thus, the growing emphasis on service-type functions in ERS has tended to affect the close "professional" ties between agricultural economists in ERS and the colleges.

More importantly, the service emphasis has raised questions in ERS over the need for a field staff. And this has seriously affected field staff morale. The issue is intensified not only because the majority of ERS field personnel seem to prefer field assignments but also because only a few of them were located there with the mutual understanding that they might one day be expected to move to Washington.

There are other changes which affect the field staff, and hence ERS-college relationships.

The maintenance of a field staff for recruiting purposes seems less convincing in the current climate of personnel limitations, tight college budgets, and relatively attractive Federal pay scales. The need has also lessened for close ties with colleges to ensure in-service and advanced training for ERS personnel, mainly because ERS and college economists have attained nearly comparable levels of professional competency.

The service emphasis and the role of field personnel are issues that have also caused concern among the colleges. ERS field personnel are viewed in many colleges as the fundamental link that they have with ERS. The loss of ERS field personnel would represent a severe disruption in established lines of communication. However, this concern of the colleges is not only with whether there will be an "ERS man" in their departments, but also with the role ERS will play in agricultural economics research. Some view with alarm the increasing emphasis within ERS on service-type functions. They suspect that ERS is forfeiting its professional leadership role,

moving from a supporter of agricultural economics expertise to a more self-contained agency tending to its own needs. Others, aware that service functions are a credit to the profession and that such functions must be performed by ERS, are nevertheless concerned over the implications of this emphasis upon their teaching and research.

These, then, are the fundamental forces affecting ERS-land grant college relationships. Their importance no doubt has been magnified by budget restrictions on both ERS and the colleges. The search for economies in ERS has intensified the pressure to reduce the field staff. The colleges, also under budget pressures, may see this reduction as a significant loss of cooperative assistance when it is most needed.

Committee Recommendations

The Committee believes that ERS should maintain strong links with the land grant colleges. This position is based on our perception of the long-run benefits more than on concern with immediate needs. Because short-run pressures seem to dominate the current climate, we think this point is worth underscoring.

As a public-supported organization, ERS must ensure that its research and information output is readily available to all who seek to use it. Likewise, the sources from which it derives its data for research and subsequent information purposes should be broadly diffused. Equalization of access to information and the maintenance of diffused data sources are principles to which ERS should adhere more conscientiously today than ever before.

In keeping with these principles ERS is well advised to develop and maintain close relationships with the colleges for two major reasons. First, the colleges could help ERS develop and maintain a better understanding of agricultural problems and the consequences of decisionmaking on the food and fiber sector. Secondly, the colleges would provide channels, largely through extension, for dissemination of the resulting intelligence to a larger number of potential decisionmakers.

We offer three general recommendations:

1. We recommend that ERS undertake discussions with the land grant colleges to improve the understanding of research roles and responsibilities of the respective institutions.

Underlying this recommendation is a basic principle stated in Part I: The ERS mission asks more of the agency than it can deliver by itself. Thus, ERS has a leadership responsibility to ensure

that its mission will be fulfilled. This responsibility can be exercised by initiating new discussions with the land grant colleges. At the same time, the colleges must be full partners in planning and carrying out this effort.

We do not suggest that ERS and the colleges try to fence off exclusive research areas. That would be very difficult in view of the changes occurring within and between colleges. It would also run counter to the idea of achieving complementarity in ERS-college relations.

Nor are we suggesting that a joint "super committee" be established to carry out this discussion. Rather, we are thinking of some ongoing mechanism that will do more than is now possible through existing channels and ad hoc contacts between individuals. We stress, too, that the spirit with which this effort is undertaken and the attitudes of the participants will be even more critical than the mechanism itself.

Several items should be placed on the initial agenda for this ERS-college dialogue.

(a) There must be a mutual understanding of the directions that ERS and the colleges are likely to take. The uncertainty accompanying changes in emphasis in ERS and the colleges is a significant problem which we think can be alleviated through frank discussion.

(b) A useful dialogue will depend on the willingness of both parties to dispel myths that still affect their relationship. For example, the colleges may have an outdated image of ERS as a "rich uncle," always ready to contribute people and funds. ERS, and its predecessor agencies, permitted and even encouraged this image. When the generosity waned, the colleges were unhappy. This response should come as no surprise and must be faced squarely by both sides. ERS has done so internally. It must now include the colleges in its thinking and planning and then develop a specific policy to govern its future relations with the colleges.

Likewise, ERS personnel may entertain the image that colleges are comprised of detached, ivory-tower academicians accountable only unto themselves. The fact is that many colleges are shifting from traditional patterns of basing rewards mainly on individual research and professional publications. Many are intimately involved in local, State, and regional problems in both research and extension capacities. Public accountability is by no means unique to ERS.

(c) The discussions should also face squarely the issue of policy research. One part of this issue is the question of objectivity.

The Committee believes that whenever possible, ERS should make its policy evaluations widely available to outsiders, especially the colleges. If ERS becomes a closed system, the high respect it now commands in the land grant colleges and elsewhere is likely to deteriorate. Admittedly, there may be some policy analyses that ERS cannot divulge outside the Department. Yet, it would be easy for ERS to overlook the advantages of an open system, especially when its services are in high demand by the Administration.

The Committee believes that it is in the long-run interest of ERS to discourage the notion that it has a monopoly on national policy research and to actively stimulate useful replication of such research in the land grant colleges. A consistency of research results coming out of the colleges and ERS can do more to increase the credibility of ERS research than all verbal claims of objectivity.

2. We recommend that ERS develop a new brand of cooperation with the land grant colleges designed to increase the complementarity of their respective research programs.

Beyond increasing the mutual understanding of research roles and responsibilities, there is the need to develop and perhaps experiment with new working relationships. Here we are thinking of arrangements such as contracting for specific pieces of research, sharing data and analytical tools, and encouraging new complementarities in areas such as policy research.

Bartering arrangements are another possibility. ERS needs certain micro information for policy evaluation. It is concerned as to whether the colleges will provide information comparable across State lines. ERS could develop this information itself, or contract for it. It could also develop with the colleges a new brand of cooperation. For example, the colleges might provide data for use by ERS and, in return, ERS would agree to use its research capabilities in analyzing questions of particular interest to the contributing colleges, such as the likely relative effects of certain policy changes on agriculture in their States. In view of the importance of interdependencies throughout agriculture, and the fact that few individual colleges could afford to develop models to analyze these relationships, many of them could find this exchange of data for analysis quite attractive.

(3) We recommend that ERS establish a clear-cut policy and develop a new perspective concerning the role of its field staff.

The Committee sees ERS-college relations and the ERS field staff as two different issues. At the same time, because the field staff has been the key link between ERS and the colleges, a decision concerning either issue is likely to have a bearing on the other.

We recognize that there are alternatives to the present field organization, and significant differences in the field staff philosophies within ERS. One approach is to assign staff to field locations for specific project purposes. Upon completion of the assignment, the researcher is returned to his headquarters in Washington. A second approach is that of permanent field assignment--an approach that has been applied in the Farm Production Economics Division. Another alternative might be for ERS to develop a cadre of liaison personnel to provide the ERS-college link, much like the Farm Foundation staff has facilitated communication and the exchange of knowledge and research planning between the colleges and the USDA.

While the Committee's deliberations have been too limited to justify strong support of any one alternative, we believe that ERS should consider carefully the opportunities it has to capitalize on its field staff and to solve the current field problems that are not inherent.

We underscore the importance of a clear-cut field policy. The current uncertainty, though not entirely new, puts constant pressure on morale and makes it difficult for ERS to get on with its mission. A "band-aid" approach will not suffice. The decision now required must not be deferred too long.

If a field component is to be retained, there must be a mutual understanding of the roles and responsibilities of field and Washington personnel. For example, are field personnel to be viewed as leaders or as a supporting staff?

We believe that a new common perspective is essential in the field and in Washington. ERS has permitted or encouraged the field staff to develop a loyalty to the colleges where they are located. It should come as no surprise that the field staff should display a detached interest in the problems that face ERS personnel and administrators in Washington. But we do not see these differences as inherent. Indeed, the evidence suggests that recent efforts to involve the field staff in ERS research planning, to use field personnel as "intelligence agents," and to emphasize field-Washington communications have already done much to alleviate the problem of program perspective.

A final comment concerns communication with field staff. The physical distance, travel cost, and the time it takes to communicate by mail has implications regarding the relations between Washington and field personnel. We urge ERS to explore recent advances in communication technology to see if reasonably priced opportunities are available to improve Washington and field communications.

PART IV: ERS RESEARCH ORGANIZATION AND MANAGEMENT

Our comments have reflected our concern over how ERS has organized and managed its research. The concern focuses upon: (1) definition and appreciation of mission; (2) organizing for research; (3) research and researcher flexibility; (4) communication and feedback; (5) responsiveness; (6) relationships with the Office of the Secretary, other agencies, and nongovernmental institutions; (7) early problem identification; (8) establishment of program priorities; and (9) research planning processes.

We do not suggest how ERS should administratively organize its economic research and information program. This is the responsibility of ERS management. Also, no group comprised largely of outsiders can fully understand and appreciate the internal workings of an agency so complex as ERS. We intend only to highlight our major impressions and concerns.

Research Mission

The ERS mission is very broad and complex. You serve many clients which have disparate needs. Demands for information and analysis for policy decisions can consume huge amounts of resources. Likewise, the requirements of the private sector for economic information can be large. The requirement to ration scarce resources among competing demands is difficult and incessant. It requires understanding of purpose, sophisticated planning, diplomacy, and conviction.

ERS is the largest single economic research agency in the world. It has a major commitment to research on agricultural problems. It has the position, the resources, and responsibility to be the pathfinder on agricultural policy and many other areas of agricultural economic research and information. Yet, to some extent the agency falls short of the mark.

ERS has been criticized for allowing excessive researcher autonomy in selecting and designing research, organizing the research program around administrative entities rather than missions, and adhering to an academic philosophy which has resulted in research being designed for and presented to members of the profession rather than being addressed to the needs of the broader group of clientele ERS must serve. While we do not concur fully with these judgments we believe several steps should be taken in ERS to allay such concern expressed by many.

We see a fundamental need to develop operationally meaningful statements of mission at all levels of the organization. To be meaningful the statements must go well beyond our general statement in Part I. What is needed are specific statements of mission that

give purpose to individual researchers consistent with overall missions of the agency. Beyond this is the need to develop criteria as a basis for determining program priorities at strategies that encompass various levels of the organization. Finally, mechanisms and processes must be created to provide interaction among staff in actually setting priorities and implementing programs.

It is sometimes easier to specify the mission and functions of an agency on an organizational chart than to instill them in the minds and vision of members of the organization. To attain this will require continuing efforts to develop an understanding of, appreciation for, and commitment to missions at all levels in the organization. Management bears the responsibility for these efforts. Although personal aspects of high performance cannot be expressed in an organizational chart or administrative memorandum, they are immensely important. They are intangible and abstract and relate to imagination, motivation, and sense of commitment of individuals. We are more certain of the immense importance of these aspects than of how to attain them.

Research Planning and Research Management

A major difficulty with ERS is the frequent failure to test research proposals against the usefulness of the expected results. It is not sufficient to justify abstract or traditional research as being basic to the understanding of the functions and performance of the agricultural sector. In the past, along with other research organizations, ERS has tended to shift rapidly to popular and new types or subjects of research. There have been periodic phases of concentration on physical efficiency in marketing and on structure, conduct, and performance in marketing. A continuing problem is the use (and publication of articles) of sophisticated mathematical techniques having little direct applicability. Commodity subsector studies are enjoying current popularity. By no means do we want to discourage innovation in research topics or methodology. Nor are we concerned if some explorations prove unrewarding. But there is a concern lest a major commitment might be made to such activities without adequate testing and evaluation. We plead for a systematic and formal approach to research planning and research evaluation--an approach which will promote useful and relevant research and ensure program balance.

We feel we must remind ERS that such an approach or system should consider: additivity, multiple uses, cost-effectiveness of the research, relative importance of the problem to clientele in the food and fiber sector, the prospect that meaningful results can be obtained, contribution to the body of economic knowledge or capital, consistency with the ERS mission, appropriateness of using Federal funds for the research problem, and the existence of a comparative advantage by ERS in undertaking the research. Additionally,

a most important element of any planning system is providing, on a frequent basis, for views of clientele concerning the relevance and usefulness of current programs and future research and informational needs to be obtained.

Clearly, the respective values of these elements must be carefully weighed by those responsible for ERS policy. Although a formal, mechanical system of tests using these criteria may not be attainable or even desirable, a more systematic appraisal of research proposals on the basis of these elements should be very useful.

While the priority areas for economic research suggested in Part II do not coincide with the current organizational structure of ERS, we do not imply that a reorganization is needed for that reason. But our recommendations clearly call for (1) a multi- rather than unidivisional approach, (2) much more team rather than individual research, and (3) central research thrusts that transcend organizational lines regardless of how they may appear on a chart. Reorganization may be a way of attaining or facilitating attainment of our recommendations, but it is only one of several administrative mechanisms that might be utilized. The use of interdivisional task forces is one such device. We leave such decisions open to ERS. In any event, we recommend more comprehensive and integrated planning and closer coordination among various divisions in conducting research.

Communication and Feedback

ERS has been strongly criticized for: (1) failing to respond to the needs of farmers and industry; (2) failing to provide timely responses to requests; (3) being inadequately aware of changes in the food and fiber sector; (4) inadequately anticipating research needs; (5) presenting too little relevant information in a form readily useful by Department administrators and other decisionmakers; (6) not being able to effectively inject economic intelligence into the decisionmaking system; and (7) not understanding the programs of the Department. The Committee believes these criticisms result fundamentally from a communication problem which is by no means exclusively the fault of ERS.

The communication problem is multidimensional. It involves line communication within ERS as well as between ERS and other agencies of the Department, the Secretary's Office, and other clientele. There is also a lateral communication problem, again within ERS and between ERS and action agencies, land grant universities, and other clientele.

A number of factors underlie the communication problem between ERS, the Secretary's Office, and the action agencies. Some people allege that action agencies' program managers and other Department

officials hesitate to call upon ERS because they do not fully appreciate the need for economic analysis, are not skilled in its use, and have trouble communicating with economists. Program managers may often feel that program operation is their responsibility and they don't want ERS "meddling." Or they may fear that ERS involvement will raise and perhaps publicize policy issues unnecessarily. Also, ERS often bills action agencies for analytical work, a procedure that may be objectionable.

On the other hand, ERS economists often are unfamiliar with the operational aspects of programs and the variables and constraints involved in the decisions that program managers and policy officials must make. Thus, research results may appear to be developed in a vacuum rather than in the context of the realities confronting program managers.

Researchers in general have difficulty responding on short notice and are hesitant to make judgments without considerable empirical evidence. This high degree of professionalism is often not appreciated by Department officials who want to know the time of day and not how the watch operates, and who must make decisions no matter how imperfect the information may be. Researchers cannot sacrifice economic logic and principles in dealing with problems of program managers and policy officials. But if researchers are to provide timely responses to requests, they must find a compromise between the time they have to do the job, data availability, and methodology.

ERS seems to have two basic problems in providing timely and relevant information. First, ERS often has not been able to effectively anticipate research needs and therefore has not been able to develop a research program to generate intelligence before it is needed. Second, there is insufficient feedback on the usefulness of information provided. These difficulties adversely affect the opportunity and capability to inject intelligence into the decisionmaking framework.

To alleviate these basic problems we recommend that a small staff be assigned to the Office of the Administrator, preferably under direct control of the Deputy for Commercial Agriculture. The primary purpose would be to identify emerging problems deserving research attention in ERS. Additional purposes would be to: structure existing and emerging problems into researchable issues, present economic information to specific clientele in a readily usable and understandable manner, and obtain feedback from users concerning relevance, usefulness and timeliness of the information provided. This staff capacity should substantially extend the lead time essential to plan and produce relevant research results at the time they are most needed. To enhance the functions of this staff, it would be desirable for action agencies to establish similar staff or liaison capabilities to interact with ERS.

We envision here an early problem identification and staff function which requires professional competence of the highest order. Among other abilities they must be well-trained in economics and have a capacity to comprehensively view the interrelationships that exist in agricultural economy. Since this capability is comparatively scarce in the agricultural economics profession the staff should receive the rank and remuneration consistent with the functions that it is expected to fulfill.

In addition, we recommend ERS consider the feasibility of either exchanging staff with action agencies or detailing ERS staff to work with program managers in action agencies. These arrangements would afford to provide better ERS understanding of the Department's programs and thereby enable ERS researchers to develop research programs more responsive to the needs of action agencies.

Finally, we recommend that a staff group located in the Office of the Secretary would provide a liaison that could catalyze the flow of information between ERS and the Secretary's Office and help focus on research needs. This group would not replace the need for staff capacity in the ERS Administrator's Office, but would complement it.

We hasten to add that the implementation of these recommendations would not assure acceptance or use of the ERS analyses because acceptance and use depend to some degree on the management style of the program manager or Department official. However, implementation would go a long way toward resolving some of the fundamental problems and bridging the existing gaps.

Concluding Comment

Finally, we want to mention staff training and development. In an agency that seeks to serve the day-to-day needs of its clientele there is the danger that the knowledge and skills will be allowed to obsolesce. Economic knowledge is a perishable commodity. To maintain a strong research organization professional training and rejuvenation is essential. ERS should make certain that staff members are encouraged and aided to update their capacities.

The Committee did not study ERS' need for training to increase skills in research and personnel management, communication and working relationships. However, to limit recommendations to technical training and rejuvenation could overlook the point that effective use of technical expertise requires abilities seldom emphasized in our professional upbringing. The opportunity to enhance these abilities through training should not be overlooked.

ERS has had a staff training program in the past which has benefited a number of employees. We encourage the continuation of this program, and recommend an expansion and broadening of the program to the extent possible. 1/

1/ This statement is fine as far as it goes. In my judgment it is necessary that an agency which relies so much on technical expertise also invest just a little resource in truly "basic research" that is, in imaginative efforts at retooling of techniques--unstructured and uninhibited. It would be far-ranging, and multi- or cross-disciplinary.--Harold F. Breimyer

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